ACOUSTIC SOLUTIONS portal ①
PORTABLE DAB RADIO

CONTENTS

1	Introduction
	Glossary
2	What is DAB?
3	Safety Instructions
4	Front Panel Controls
5	Connectors
	Positioning Your Aerial
6	Connecting to an External Amplifier/ Headphones
7	Using the Portal 1 DAB Radio
11	Troubleshooting
12	Specifications
	Contact Details

INTRODUCTION

Congratulations on purchasing the Acoustic Solutions 'Portal 1' DAB radio. You have chosen to become one of the early adopters of digital radio in the UK.

The Portal 1 radio has been developed following an extensive research and development program along with the IDEO London design house to create what we regard as an exceptional domestic audio product that utilises DAB radio.

We trust that this product will give you hours of listening pleasure, and provide years of unparalleled performance. As with any new electrical product please be patient and allow 36 hours of use before all components have acclimatised themselves with your surroundings and found their optimum working temperature.

GLOSSARY

DAB	Digital Audio Broadcasting
RDS	Radio Data System
UI	User Interface
DLS	Dynamic Label Segment
SNR	Signal to Noise Ratio

WHAT IS DAB?

DAB radio will change the way that people listen to radio over the next few years. You will probably be aware that digital radio will become mandatory in the future as the terrestrial radio frequencies which you currently listen to will be re allocated for other uses such as emergency services. This means that today you are one of the pioneers using this technology, however in a short space of time everybody will benefit from clear digital radio.

Digital radio offers an abundance of new digital only stations and improved sound quality. There are no frequencies to remember so the Portal 1 can be tuned by searching through station names. The audio quality of DAB is near that of a CD with virtually no interference and no retuning. DAB is also enhanced with DLS (Digital Label Segment), this is data transmitted by the station which may include information about the station, program or song (see page 9).

The BBC was the pioneer of digital radio, beginning transmissions in September 1995. Digital One, the national commercial radio multiplex operator, began broadcasting in November 1999. There has been a growth in the number of digital radio stations throughout the UK and both the BBC and Digital One are committed to extending their coverage. Digital One currently covers 80% of the UK population, soon to increase to 85%, and the BBC covers 65% with the aim of increasing coverage to 80% by 2005.

There are currently over 350 DAB stations operating in the UK including the following:

BBC stations:
Radio 1, 2, 3, 4, 5, 6, 7
1Xtra
Asian Network

Commercial stations:
Capital Radio
Planet Rock
X-FM
Virgin.

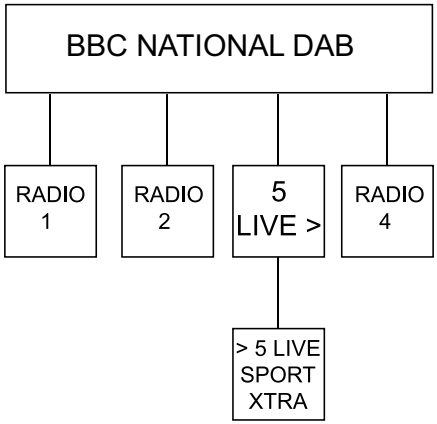
Your Acoustic Solutions' Portal 1 DAB radio will receive DAB programs broadcast on Band 3 digital radio (174-240MHz). There are a total of 41 channels within this range numbered 5A to 13F, the number of channels you can receive will be dependant on your location and signal strength. The UK has been allocated seven multiplexes by the Radio Authority - in the spectrum 217.5-230.0 MHz, which are numbered 11B to 12D.

A multiplex is a broadcaster such as BBC National DAB or Digital One who will provide a host of different stations within their multiplex. If we consider the BBC as an example, the following diagram shows how the BBC multiplex may work.

Below the main multiplex provider (in this case 'BBC NATIONAL DAB') will be host a number of primary stations. These are labelled with the station name (e.g Radio 2) rather than the frequency. This allows you to tune the Portal 1 by station name, which is easier than trying to recall frequencies.

Sometimes a secondary service station may be provided by the broadcaster, for instance this is sometimes used when an alternative commentary is provided on a sporting match or event. These secondary service stations are not permanent and may not always be used for broadcast. When a secondary station is available below the primary station, a '>' symbol will be displayed after the primary station name. A secondary station can be recognise by the '>' symbol before the secondary station name.

Details on how to use the Portal 1 are covered in the following pages.



SAFETY INSTRUCTIONS

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE ANY COVER. NO USER-SERVICEABLE PARTS INSIDE, REFER ANY SERVICING TO QUALIFIED SERVICE PERSONNEL.

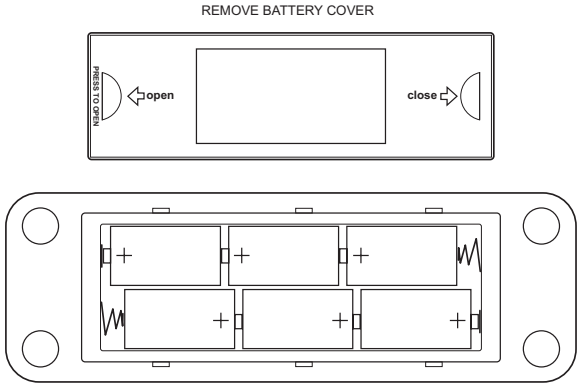
IMPORTANT SAFETY INSTRUCTIONS

- Read and keep these instructions available for future reference.
- For indoor use only
- The unit must only be connected to a suitable mains power supply using the mains power adapter provided.
- To reduce the risk of fire or electrical shock, do not expose this unit to rain or moisture.
- The apparatus should not be exposed to dripping or splashing.
- No objects filled with liquids, such as vases, shall be placed on the apparatus.
- Take care that foreign objects do not enter, or liquids are not spilled, into the enclosure through any openings. If this should happen, refer to qualified service personnel before attempting to use.
- Do not install near any heat source, such as radiators, or other equipment that produces heat.

This product complies with European low voltage (73/23/EEC) and electromagnetic compatibility (89/336/EEC) directives.

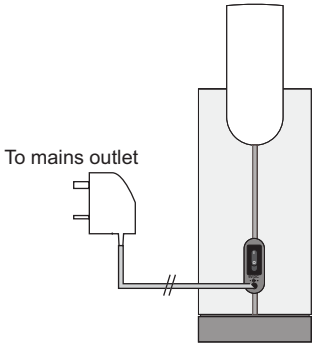
FITTING BATTERIES

- Please ensure the batteries are fitted to the correct polarities (+/-).
- Do not mix old and new batteries.
- Use only 1.5V 'C' LR14 type batteries
- Please remove 'used' batteries to reduce the risk of damage caused by possible battery leakage.
- If you intend to use the Portal 2 only with the power supply it is not necessary to fit batteries.



USING THE POWER SUPPLY

- Only use the power supply provided.
- Plugging in the power supply automatically disconnects the internal batteries.



CONTROL PANEL

1. TUNE DIAL
Use this dial to scroll through available stations and frequencies.

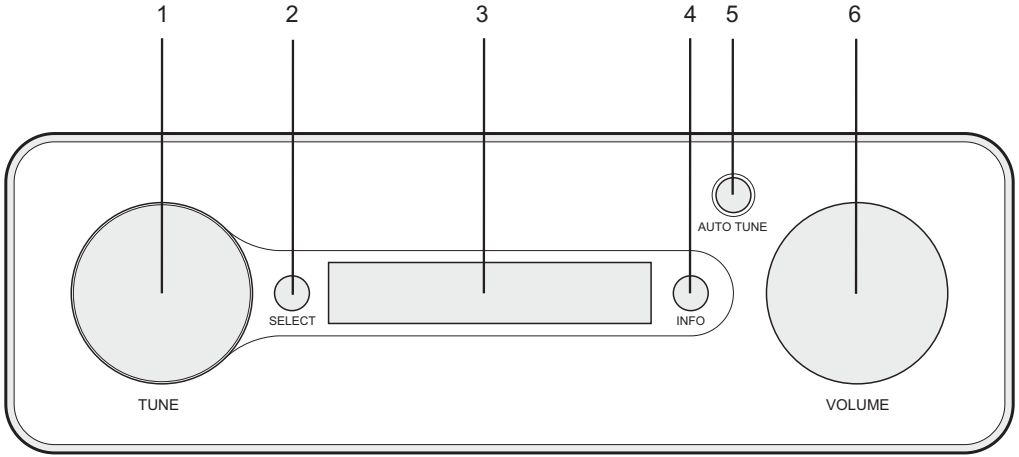
2. SELECT BUTTON
Use this button to select your required station.

3. LCD DISPLAY
Displays system status and other information.

4. INFO BUTTON
Use to toggle through station information displayed on the LCD display including DLS (Dynamic Label Segment), signal strength and time and date information.

5. AUTOTUNE BUTTON
Use this button to scan your area for any available DAB stations.

6. VOLUME CONTROL
Use to adjust the volume of the internal speakers or headphones (not

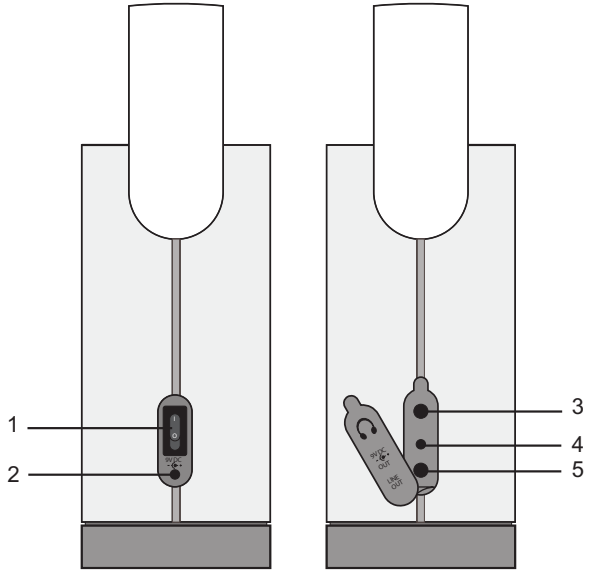


CONNECTORS

1. Power switch
2. 9V DC input (Power adapter provided)
3. 3.5mm headphone output
4. DC output
5. 3.5mm stereo line output

NOTE: The DC output socket (item 4) has been fitted to allow connection of future accessories yet to be released.

To keep up to date with products and accessories for the Portal DAB range and other Acoustic Solutions products and accessories, please visit our website at www.acousticsolutions.co.uk.

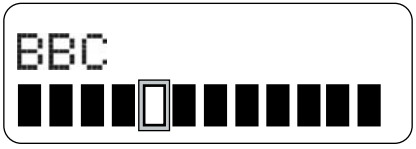


POSITIONING YOUR AERIAL

The Portal 1 radio is fitted with a telescopic DAB aerial for you convenience. This aerial works best in areas with a moderate to strong signal strength, but be prepared to adjust the position of the aerial. Use the signal strength meter (described below) to help find the best aerial position.

CHECKING YOUR SIGNAL STRENGTH

You can check your signal strength at any time using the INFO button (4, pg 4). Press the INFO button several times until you see the following display (BBC is displayed as an example only):



The signal strength is shown by the number of segments filled from left to right. You will notice that one of the segments will have an outline around it. This indicates the minimum level of signal required in order to achieve adequate signal reception. If your signal strength is below this threshold you may experience a slight burbling sound over the transmission.

CONNECTING AN EXTERNAL AERIAL

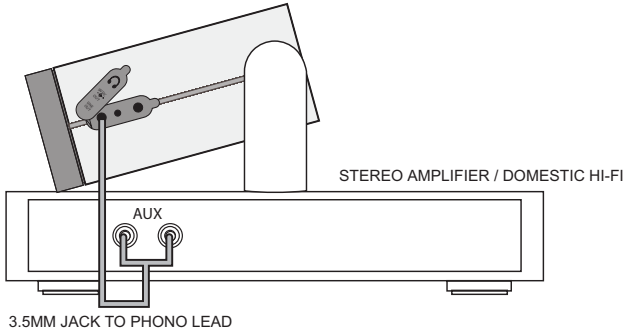
If you are situated in an extremely poor signal area, you may need to purchase a 4 element DAB aerial. The supplied telescopic aerial can be removed to allow connection of an external aerial with an F type connector. Installation requires someone to move the aerial whilst you monitor the signal strength (See checking your signal strength)

CONNECTING TO AN EXTERNAL AMPLIFIER/HEADPHONES

CONNECTING TO AN EXTERNAL AMPLIFIER

The Portal 1 radio has the facility to connect to a stereo amplifier, including most domestic hi-fi systems. On the side of the unit you will see a 'LINE OUT' socket. Connect a stereo 3.5mm jack-to-RCA phono lead (available from most electrical stores) from the LINE OUT socket (5, pg 5) into a stereo/AUX input on your stereo amplifier/domestic hi-fi system.

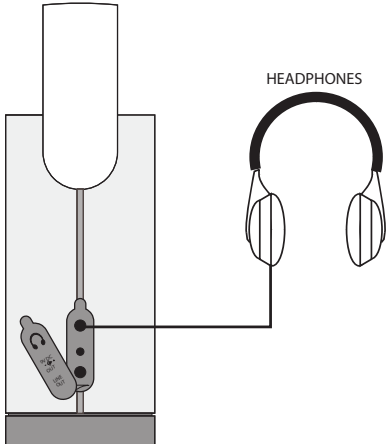
Turn the VOLUME control dial (6, pg 4) on the radio fully anti-clockwise to mute the internal speaker.



The Portal 1 radio is designed to stand in an upright position to maximise sound projection from the built-in speaker. However, in the scenario where you would be connecting to an external amplifier, it is best suited to be positioned in the lying down position (see above diagram), because the front mounted speaker will not be utilised and this will also provide easy access to the controls when it is mounted on top of an amplifier or hi-fi system

CONNECTING HEADPHONES

You can connect a set of headphones to the radio for private listening. Connect your headphones (not supplied) to the Portal 1 headphone output socket (3, pg 5) using the 3.5mm jack plug on your headphone cable. Connecting headphones to the radio will automatically mute the built-in speaker.



ADJUSTING THE VOLUME

The Portal 1 radio is fitted with a mono speaker. You can adjust the volume of the built-in speaker or your headphones using the volume dial on the control panel. Turn clockwise to increase the volume or turn anti-clockwise to decrease the volume.

Note: Take care when adjusting the volume when using headphones, as high volumes may permanently damage your hearing.

If you have connected the radio to an external amplifier, please use the volume controls on your amplifier to adjust the volume.

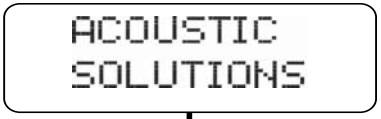
USING THE portal① DAB TUNER

GETTING STARTED
Once you have either fitted batteries or connected the power supply and extended the aerial you can begin using the Portal 1 DAB radio.

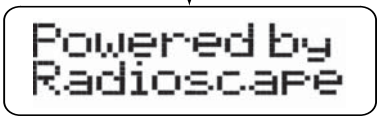
To begin, switch on the system using the power switch on the side of the unit (1, pg 5).

You will be greeted by a number of introduction messages on the LCD display, which should last for approximately 4-5 seconds.

1)



2)



BUILDING A STATION LIST
Next the radio will automatically begin creating a station list by entering the Autoscan mode. This will locate all of the digital radio stations within your area. During this process you will see a progress bar scrolling across the top section of the LCD display. When the process completes you will see a number on the top right hand side of the LCD display. This number indicates the total number of stations located.

If no services have been located after this process, check the positioning of the telescopic aerial and use the AUTOTUNE button (5, pg 4) to begin the search once more.

The nature of DAB means that the service line ups are constantly changing as more primary stations become available. Therefore, it is a good idea to occasionally reselect the AUTOTUNE button to check for any additional stations in the UK, which may have come available. You can stop the Autotune feature at any time by pressing any key.

Should you be using the DAB radio outside of the UK, it is possible to search for all stations operating in band 3. Hold down the AUTOTUNE button until the display reads ‘AUTOTUNE - Full Scan’.

NOTE: Once a station list has been compiled it will be stored in the systems memory unless you decide to reset it. If you move location then some stations may not be available in the area although the station still exists in Portal 1’s memory. In this case you should reset the unit and allow it to Autoscan the new area for available stations.

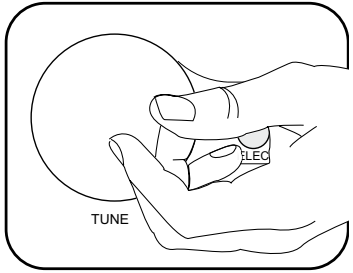
SYSTEM RESET
To reset the system, first switch off the unit, then hold down the SELECT button and switch on the unit. Keep holding down the SELECT button until the LCD display reads ‘SYSTEM RESET’. The system will now activate a full re-scan of the new area and all old stations which are no longer available will be removed.

STATION LISTS

SELECTING YOUR STATION

Once the DAB radio has completed searching for stations in your locality, it will store the station list alphabetically with numeric values (e.g. 1Xtra) listed before alpha values (e.g. Planet Rock).

Rotate the TUNE dial (1, pg 4) to scroll up and down through the station list. Whilst scrolling through the station list you will see that the station name will be displayed on the top line of the LCD display and the station type (e.g. Pop Music) will be displayed on the bottom line of the LCD display.



Turn the TUNE dial clockwise to scroll up through alphabetical stations list, or anticlockwise to scroll down the list.

Once you have found your desired station, push the SELECT button (2, pg 4) to confirm your selection. The DAB radio will now tune to this station.

Sometimes the LCD display will read ‘STATION NOT AVAILABLE’. This indicates either a previously stored station is not being broadcast or you have moved to a location where this station is not available. This is common for secondary stations that only broadcast occasionally.

NOTE: You must first select a primary service in order to view the available secondary services beneath it.

AUTO-SELECT FEATURE

It is possible to set Portal 1 to automatically select a station once you have stopped scrolling through the station list, removing the need to use the SELECT button to confirm your selection.

To activate the Autoselect feature, rotate the TUNE dial in any direction and then immediately push and hold the SELECT button until the LCD display reads ‘Autoselect ON’. Repeat this process to deactivate this feature.

MANUAL TUNING

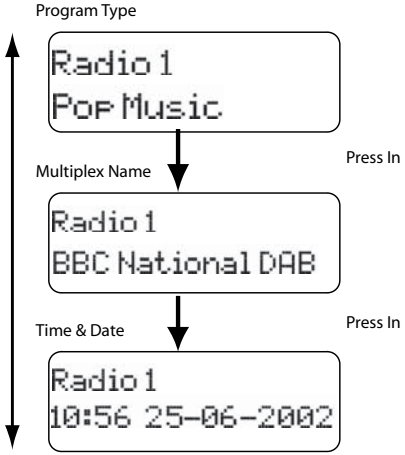
It is possible to manually tune the Portal 1 DAB radio. Push and hold the SELECT button for a number of seconds until the LCD display reads ‘MANUAL TUNING’ to activate the manual tuning option. At this point, rotate the TUNE dial to scan up and down through channels 5A to 13F. You can exit the manual tuning option by pressing and releasing the SELECT button at any time.

USING THE INFO BUTTON

It is possible to change the information displayed on the bottom line of the LCD display when listening to a DAB station.

You can change the information displayed by repeatedly pressing the INFO button (4, pg 4) to toggle between views. The views are as follows:

1. DLS (Dynamic Label Segment): This is scrolling text information supplied by the radio station. This may be information on music titles or details regarding the radio station.
2. Program Type: This is a description of the type of broadcast provided by the radio station.
3. Multiplex name: This will display the broadcaster that is providing the station you are listening to.
4. Signal strength bar graph indicator.
5. Date and time: This will display a constant time/date signal provided by the broadcaster. This is not an internal clock so it should always be accurate.



TROUBLE SHOOTING

We hope you have many years of enjoyment from the Portal 1 DAB radio, however if you are having any difficulties please follow the trouble shooting guide below or contact the Acoustic Solutions' helpline on **01327 340601.** This helpline is manned from **9:00am** to **1:00pm** and **2:00pm** to **4:30pm**, **Monday** to **Friday.**

PROBLEM	POSSIBLE SOLUTION
My Portal 1 will not switch on.	Check that you have connected the provided power supply and have connected it to a suitable 230V mains outlet. If using batteries, ensure that they are fitted to the correct polarity, Check that all batteries are new and that they are 1.5V 'C' type batteries.
I can't get any sound from my Portal 1.	Check that the system is powered with either batteries or the provided power supply (See above). Check to the volume level of the Portal 1
I cannot find any DAB stations.	Check that antenna is positioned correctly (See page 5). Ensure that DAB coverage exists in your area. Visit www.digitalradionow.co.uk to check for DAB coverage.
I can't hear the station I have selected	Ensure you have pressed the SELECT button when you have made your selection. Check your volume settings
I can't access secondary services	You must first select the primary station that hosts the secondary stations in order to view the available secondary services. (See page 9). Secondary services are mostly used for special broadcasts such as sports and events.
Display has gone blank or says 'station not available'	This may occur if a broadcaster changes the label of a service or removes a service or station whilst you are listening to it. The Portal 1 will try to retune to this station, or alternatively follow the procedure for autotune on page 7.
I cannot get any sound from my external amplifier.	Ensure your 3.5mm stereo jack plug is inserted fully into the 3.5mm line out socket on the Portal 1. Check to ensure you have selected the relevant input setting on your amplifier Check the volume of your external amplfier

CARE AND MAINTENANCE

To clean the Portal 1 radio, wipe the case with a slightly moist, lint-free cloth. Do not use any cleaning fluids containing alcohol, ammonia or abrasives. Do not spray an aerosol at or near the radio.

Always use original packaging if it is necessary to transport the unit at any time.

If this unit is used in a dusty environment, it may be necessary to have the unit serviced at your local dealer periodically. It is not advisable to allow large deposits of dust to accumulate within the unit as it may prevent adequate cooling. Similarly dust deposits which become damp can sometimes lead to electrical problems which may cause severe damage to the delicate electronics within this unit.

SPECIFICATIONS

RF SECTION	• Band III, 174MHz- 240MHz • Input: 50R • Max signal: 0dBm typical • Sensitivity: -97dBm typical • Adjacent Channel Rejection: 35dB typical
DISPLAY	• 2 line by 16 character LCD • LED backlight
PRESETS	6
AUDIO OUTPUT	• Stereo, 200mV • 48kHz sample rate • 16 bit sample resolution • SNR 75dB typical
POWER OUTPUT	• 2 watts total music power
POWER SUPPLY	• Supply voltage - 230V AC • Output voltage - DC 9 volts 500mA
BATTERY SPECIFICATION	• 6 x 1.5V 'C' type, LR14, MN1400-C
OPERATING TEMP	• 0 to 50 deg C

CONTACT DETAILS

We trust you are completely satisfied with this product from Acoustic Solutions Limited, however please feel free to contact us if you experience any difficulties, or if you would like to express your views regarding our products
Please write to:

Acoustic Solutions Limited.
Grand Union Buildings
54 High Street
Weedon Bec
Northampton
NN7 4QD
United Kingdom
Telephone +44 (0)1327 340601
Fax: +44 (0)1327 342298
www.acousticsolutions.co.uk
email: enquiries@acousticsolutions.co.uk

Through the process of continuous improvement, Acoustic Solutions Limited reserves the right to change or alter specifications without prior notice. E&OE

OTHER USEFUL ADDRESSES

BBC Digital Radio
Room 5661
Broadcasting House
Portland Place
London, W1A 1AA
Tel 08700 100 123
email: digitalradio@bbc.co.uk
www.bbc.co.uk/digitalradio

Digital Radio Development Bureau
The Radio Centre
77 Shaftesbury Avenue
London
W1D 5DU
Tel 020 7306 2630
email: info@drdb.org
www.drdb.org

Digital One
20 Southampton Street
London
WC2E 7QH
W1D 5DU
Tel 020 7288 4600
email: info@digitalone.co.uk
www.ukdigitalradio.com